REMARKS

Applicant has now carefully considered the above-identified Office Action, and in consideration thereof has extensively amended the claims of this application (as well as small portions of the specification) to meet all of the Examiner's objections. As now presented it is believed that all claims are fully allowable and that all other objections have been overcome. Accordingly, it is respectfully requested that favorable consideration now be provided.

With respect to the specification the applicant has slightly amended a paragraph at page 8 and one at page 10 to overcome the Examiner's objections to the phrase "IP adjuster". The term inserted in place thereof is "PI controller". The component in question is a proportional integral controller, and the use of the phrase "PI controller" to refer to same is well understood in the art as this is a basic control which is used in many control devices, for example for controlling temperature, flow control, pressures, etc.

With regard to the claims it will be noted that Applicant has revised the claims extensively. Thus Applicant has now deleted the method claims, in consequence of which all claims are now directed at the apparatus or system. Clarification of the functions of the apparatus have been incorporated into the claims at a number of points, and it is believed for such reasons that all art based and other rejections to same are clearly overcome.

With regard to the art based rejections, these are respectfully transversed, in view of the following analysis:

The system of the invention, as disclosed and as claimed in the amended claims functions so as to enable continuous observation of the development of a biomass in a biotechnological process, and is distinct from any device disclosed in the references identified below as D1, D2, D3, D4 or D5, or by any combination of such documents. The only common feature of the present application with documents D1, D3, D4 and D5 is that in these patents use is made of a light source to effect a measurement, and/or that use is made of a reference value - a feature which is common to most scientific experiments.

US-3.674.370 (D1) (1972). This patent has as an objective to improve an apparatus for measuring oxygen demand in water, in such a way that it can be automatically determined and with

an apparatus that will not be attacked by corrosive substances. The apparatus described works automatically and discontinously. The object of this patent has no relation to the object of the present application, and the apparatus for achieving said object is completely different from the system of the present invention, even though in both cases a measure of the light absorbance is effected. The combination of the device described in US-3,674,370 with the teachings of Sweet (US-2,594,514), Pross (US-4,037,972) or Beer (US-3,486,906) could not reasonably lead to the apparatus as per amended claim 1 of the present invention.

US-2,594,514 (D2) (1946). This patent describes a null type measuring system employing primary and comparison sources of radiant energy and electrical means for logarithmically compensating the intensity of the comparison sources to obtain a balance of the energy from both sources incident upon an energy sensitive measuring element. The characteristics of the device described in D2 combined with the features of the apparatus described in one or more of D1, D3, D4 or D5 would not lead to the apparatus claimed in the present application.

US-4,037,972 (D3, 1977) describes a zero-balancing pocket type apparatus, comprising: a first photoelectric element located in the path of a beam coming from a light source, a second element located in the path of a reference beam coming from the same light source, a difference amplifier having two input terminals, each connected to one of the photoelectric elements, an indicator connected to an output terminal of the differential amplifier and an electronic regulator system actuated by a switch. The apparatus is completely different from the equipment of the present invention. Furthermore, the combination of teachings of D3 with one or more of D1, D2, D4 or D5 does not reasonably lead to the apparatus of the present invention.

US-3,489,906 (D4, 1966) This document describes an apparatus that would not serve to continuously measure the optical absorbance of a sample and determination of a physical parameter in a biotechnological process. In the case of D4 a single light source is used and the intensity of the light beams is modified by interposing optical filters to attenuate the light between the source and the sample. This gives rise - among many others - to essential differences in the equipment.

The characteristics of the apparatus of D4 combined with the characteristics of the devices of any of D1, D2, D3 or D5 will not lead to the system of the present invention.

US-5,699,156 (D5, 1997): This document describes a spectrophotometer which is a completely different apparatus from that of the present application. This spectrophotometer is designed to use a wavelength range much broader than that used in other conventional devices.

In consideration of the extensive amendments, and of the foregoing analysis, it is believed that all objections to patentability have been properly overcome. It is therefore respectfully requested that the Examiner now find all remaining claims to be fully allowable.

Respectfully submitted,

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